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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,249	05/31/2000	John Erik Lindholm	NVIDP021/P000174	6400
28875	7590	08/21/2006	EXAMINER	
Zilka-Kotab, PC P.O. BOX 721120 SAN JOSE, CA 95172-1120			GOOD JOHNSON, MOTILEWA	
			ART UNIT	PAPER NUMBER
			2628	
DATE MAILED: 08/21/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/586,249

Applicant(s)

LINDHOLM ET AL.

Examiner

Motilewa Good-Johnson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45,48,49 and 52-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45,48,49,52,53,55-57 and 59-62 is/are rejected.
- 7) ☒ Claim(s) 54, 58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 45, 48, 49, 52, 53, 55-57 and 59-62 rejected under 35 U.S.C. 102(e) as being anticipated by Devins, U.S. Patent Number 6,762,761.

Regarding claim 45, Devins discloses a method for programmable processing in a hardware graphics accelerator, comprising: receiving graphics data including lighting information in a hardware graphics accelerator (col. 1, lines 60-61 and col. 5, lines 15-19); and performing programmable operations on the graphic data utilizing the hardware graphics accelerator in order to generate output, wherein the operations are programmable by a user utilizing instructions from a predetermined instruction set capable of being executed by the hardware graphics accelerator (col. 5, lines 27-31, further it is the interpretation of the Examiner that Devins allows for a less than operation, i.e. instruction already prestored, a load, i.e. instruction need to be stored, a move, i.e. move on to the next operation, col. 7, lines 12-37, for example Devins discloses font generation in which a programmer offloads graphics operations including

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a move, a multiply , i.e. copy, an addition and set on less to prevent performing repetitive tasks in the processor, to increase rendering speed, col. 1, line 66- col. 2, line 8)

Regarding claim 48, Devins discloses a method for processing graphics data, comprising: transforming the graphics data utilizing a hardware graphics accelerator (col. 1, lines 30-37); and lighting the graphics data utilizing the hardware graphics accelerator (col. 1, lines 60-61) wherein at least one of transforming and the lighting includes performing operations on the graphics data utilizing instructions from an instruction set capable of being executed by the hardware graphics accelerator (col. 2, lines 35-46), the operation including a no operation, a load, a move, a multiply, an addition, and a set on less than each capable of being carried out by the hardware graphics accelerator (col. 2, lines 58-64, monitoring the status indicator in the graphics accelerator and issuing instructions based on status information, further in col. 4, lines 1-7, causing a delay execution of instruction and deciding to move on to the next instruction in the memory and having prestored instruction. It is therefore the interpretation of the Examiner that Devins allows for a no operation, i.e. instruction already prestored, a load, i.e. instruction need to be stored, a move, i.e. move on to the next operation. Devins further discloses in col. 7, lines 12-37, an example of font generation in which a programmer offloads graphics operations including a move, a multiply , i.e. copy, an addition and set on less to prevent performing repetitive tasks in the processor, to increase rendering speed, col. 1, line 66- col. 2, line 8)

Regarding claim 49, it is rejected based upon similar rational as above claim 48.

Regarding claim 52, Devins discloses a method for processing graphics data, comprising: transforming the graphics data utilizing a hardware graphics accelerator (col. 1, lines 30-37); and lighting the graphics data utilizing the hardware graphics accelerator (col. 1, lines 60-61); wherein at least one of transforming and the lighting includes performing operations on the graphics data utilizing instructions from an instruction set capable of being executed by the hardware graphics accelerator, the instruction set including a no operation instruction , a load instruction, a move instruction, a multiply instruction, an addition instruction, and a set on less than instruction; wherein the transforming and the lighting further include negating the graphics data and branching (col. 2, lines 58-64, monitoring the status indicator in the graphics accelerator and issuing instructions based on status information, further in col. 4, lines 1-7, causing a delay execution of instruction and deciding to move on to the next instruction in the memory and having prestored instruction. It is therefore the interpretation of the Examiner that Devins allows for a no operation, i.e. instruction already prestored, a load, i.e. instruction need to be stored, a move, i.e. move on to the next operation. Devins further discloses in col. 7, lines 12-37, an example of font generation in which a programmer offloads graphics operations including a move, a multiply , i.e. copy, an addition and set on less to prevent performing repetitive tasks,

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which Examiner interprets as negating, in the processor, to increase rendering speed, col. 1, line 66- col. 2, line 8)

Regarding claim 53, it is rejected based upon similar rationale as above claim 52. Devins further discloses wherein a plurality of the operations are performed in parallel; wherein the hardware graphics accelerator operates with an OpenGL application program interface (col. 1, lines 38-50)

Regarding claim 55, Devins discloses wherein the graphics data includes vertex data, and the operations perform vertex processing on the vertex data (col. 1, lines 34-37, rendering of graphical primitives, which Examiner interprets as inclusive of polygons which are inclusive of vertex information)

Regarding claim 56, Devins discloses wherein multiple vertices represented by the vertex data are operated upon in parallel (col. 8, lines 1-3, further 28-37)

Regarding claim 57, wherein the graphics data is swizzled (col. 5, lines 32-37, data swapping which Examiner interprets as swizzled)

Regarding claim 59, Devins discloses wherein the graphics data includes vertex data, and the operations perform vertex processing on the vertex data (col. 1, lines 34-

37, rendering of graphical primitives, which Examiner interprets as inclusive of polygons which are inclusive of vertex information)

Regarding claim 60, Devins discloses wherein multiple vertices represented by the vertex data are operated upon in parallel (col. 8, lines 1-3, further 28-37)

Regarding claim 61, wherein the graphics data is swizzled (col. 5, lines 32-37, data swapping which Examiner interprets as swizzled)

Regarding claim 62, Devins discloses further comprising: determining whether the hardware graphics accelerator is operating in programmable mode; performing the operations on the graphics data if it is determined that the hardware graphics accelerator is operating in the programmable mode; and operating on the graphics data in accordance with a standard graphics application program interface if it is determined that the hardware is not operating in the programmable mode (col. 5, lines 9, monitoring the status register to delay issuing of instructions in the memory until status information is present, used to offload onto a graphics operations device under control of instruction in a program, which Examiner interprets as checking for programmable mode)

3. Claims 54 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The prior art in its entirety fail to render obvious a reciprocal, a reciprocal square root, a three component dot product, a four component dot product, a distance, a minimum, a maximum, an exponential and a logarithm.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa Good-Johnson whose telephone number is (571) 272-7658. The examiner can normally be reached on Monday, Tuesday and Wednesday 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KEE M. TUNG
SUPERVISORY PATENT EXAMINER